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EXAMINER	
THOMPSON, JAMES A	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/707,144	Applicant(s) RAMSAY ET AL.	
	Examiner James A Thompson	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-118* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-118* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 90 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The system of claim 82, upon which claim 90 depends, does not recite the image enhancement module referred to in claim 90, nor does claim 90 particularly point out and distinctly claim the properties of the image enhancement module.

Prelude to Prior Art Rejections

3. The prior art rejections are organized in the following way:

Claim 42 discloses an image processing system that performs the image processing method disclosed in claim 1. Claims 115 and 116 are two types of embodied computer programs that perform the method of claim 1. Claims 1, 42, 115 and 116 are therefore discussed together.

Claim 82 discloses an image processing system that performs the image processing method disclosed in claim 23. Claims 117 and 118 are two types of embodied computer programs that perform the method of claim 1. Claims 23, 82, 117 and 118 are therefore discussed together.

The systems of claims 43-54 perform the methods of claims 2-13, respectively. Claims 2-13 are therefore discussed with claims 43-54, respectively.

The systems of claims 83-92 perform the methods of claims 24-33, respectively. Claims 24-33 are therefore discussed with claims 83-92, respectively.

Claims 55-60 contain the limitations as claims 93-98. Furthermore, the systems of claims 55-60 perform the methods of claims 14-18, respectively, and the systems of claims 93-98 perform the methods of claims 34-38, respectively. Claims 14-18, claims 34-38, claims 55-60, and claim 93-98 will therefore be discussed together, respectively. Further, claim 19 contains the same limitations as claim 18 and will therefore also be discussed with claim 18.

Claims 61-63 contain the limitations as claims 99-101. Furthermore, the systems of claims 61-63 perform the methods of claims 20-22, respectively, and the systems of claims 99-101 perform the methods of claims 39-41, respectively. Claims 20-22, claims 39-41, claims 61-63, and claim 99-101 will therefore be discussed together, respectively.

Claim 57 contains the same limitations as claim 95. Claims 57 and 95 will therefore be discussed together.

Claims 64-65 contain the same limitations as claims 102-103, respectively. Claims 64-65 and claims 102-103 will therefore be discussed together, respectively.

Claims 71-81 contain the same limitations as claims 104-114, respectively. Claims 71-81 and claims 104-114 will therefore be discussed together, respectively.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4-15, 17-19, 23, 26-35, 37-38, 42, 45-57, 59-60, 71, 82, 85-95, 97-98, 104 and 115-118 are rejected under 35 U.S.C. 102(b) as being anticipated by Higgins (US Patent 5,835,627).

Regarding claims 1, 42, 115 and 116: Higgins discloses an image processing system (figure 2 of Higgins). Figures 3-10 of Higgins show further details of the image processing system (column 3, lines 14-29 of Higgins).

Said system comprises an image analysis module (figure 7(82) of Higgins) for automatically analyzing each of the input images (column 16, lines 52-57 of Higgins). Said image analysis module analyzes the color space (column 16, lines 54-57 of Higgins), the discrete spectrum of the color space via a discrete cosine transform (column 16, lines 57-63 of Higgins), and the base level noise (column 17, lines 15-20 of Higgins).

Said system further comprises an image classification module (figure 7(83) of Higgins) for automatically classifying the analyzed image (column 16, lines 40-46 of Higgins). The classification is a hierarchy in the form of a pyramid (column 16, lines 47-51 of Higgins).

Said system further comprises an image enhancement module (figure 5(34) of Higgins) for automatically enhancing the classified image (column 14, lines 5-11 of Higgins). Since the resultant image that is input into said image enhancement module is based on the results of said image classification module (column 18, lines 13-14 and lines 18-21 of Higgins), then the enhancement is based on the classification.

Said system further comprises an output module (figure 2(12) of Higgins) for outputting at least one enhanced image (column 8, lines 48-56 of Higgins).

Further regarding claim 115, the overall image processing system uses a computing system with computer programs stored on a physical, computer-readable medium (column 7, lines 38-43 of Higgins).

Further regarding claim 116, in order for the image processing system to calculate using the programs stored on said physical, computer-readable medium, it is inherent that the binary data comprising said programs must be transmitted to the CPU. Therefore, said encoded programs of instructions are sent on a computer data signal embodied in a carrier wave readable by the computing system.

Regarding claims 4 and 45: Higgins discloses that the image analysis module, the image classification module, the image enhancement module, and the output module process the input image in real time on-the-fly (column 7, lines 14-20 of Higgins). The observer selects the specific processing chain for operation (column 7, lines 14-20 of Higgins), so the system processes the input image in real time on-the-fly.

Regarding claims 5 and 46: Higgins discloses that the image analysis module, the image classification module, the image enhancement module, and the output

module process the input image as a group of images that differ from one another by measurable image attributes for the purpose of psychovisual testing (column 5, lines 9-13 of Higgins). The combination of attribute changes are tested simultaneously (column 5, lines 19-23 of Higgins), which implies some form of batch mode processing.

Regarding claims 6 and 47: Higgins discloses that the image analysis module, the image classification module, the image enhancement module, and the output module process the input image in an embedded software (column 8, lines 16-21 of Higgins). Special-purpose hardware and program components (column 8, lines 18-19 of Higgins) is, by definition, embedded software.

Regarding claims 7 and 48: Higgins discloses that the image analysis module, the image classification module, the image enhancement module, and the output module process the input image in an embedded hardware (column 8, lines 16-21 of Higgins). The system can be implemented with special-purpose hardware (column 8, lines 17-19 of Higgins), of which embedded hardware is a type.

Regarding claims 8 and 49: Higgins discloses that the image analysis module, the image classification module, the image enhancement module, and the output module process the input image in an embedded firmware (column 8, lines 16-21 of Higgins). The combination of computer with special purpose hardware and program components (column 8, lines 19-21 of Higgins) comprises embedded firmware.

Regarding claims 9 and 50: Higgins discloses that the input images are processed by different modules in a series or chain arrangement (column 13, lines 45-51 of Higgins) of which the image enhancement module (figure 5(34) of Higgins) is a

part (figure 5 and column 13, lines 45-48 of Higgins). Since operations applied to the input images are applied in a series or chain arrangement (figure 5 of Higgins), then the image enhancement module (figure 5(34) of Higgins) applies an individual image enhancement independently to each of the input images (column 13, lines 22-27 of Higgins).

Regarding claims 10 and 51: Higgins discloses a pre-processor (figure 5(32) of Higgins) for pre-processing the image (column 13, lines 51-61 of Higgins). Since the pre-processor executes before the image analysis module (figure 7(82) of Higgins) and the image classification module (figure 7(82) of Higgins), both of which form the image integrity molecule class (figure 5(33) and column 16, lines 25-27 and lines 34-36 of Higgins), and the image enhancement module (figure 5(34) of Higgins), as clearly shown in figure 5 of Higgins, then the input image is pre-processed before analyzing, classifying, and enhancing the input image.

Regarding claims 11 and 52: Higgins discloses an image resizer (figure 5(34(l)) of Higgins) for resizing the enhanced image (column 14, lines 8-10 of Higgins). The special effects module includes a plurality of modules, each performing different effects upon the image (column 14, lines 5-9 of Higgins). One such module performs stretching and skewing (column 14, lines 8-10 of Higgins), which therefore resizes the image.

Regarding claims 12 and 53: Higgins discloses an image compression module (figure 5(35) of Higgins) for compressing the enhanced image (column 19, lines 38-43 of Higgins) before outputting the enhanced image (column 19, lines 43-44 of Higgins).

Regarding claims 13 and 54: Higgins discloses an image compression module (figure 5(35) of Higgins) for compressing the enhanced image (column 19, lines 38-43 of Higgins) before outputting (column 19, lines 43-44 of Higgins) the resized image (column 14, lines 8-10 of Higgins). The special effects module (figure 5(34) of Higgins) which performs stretching and skewing, and thus resizing (column 14, lines 8-10 of Higgins), operates before the compression module (figure 5(35) of Higgins), as can clearly be seen in figure 5 of Higgins.

Regarding claims 23, 82, 117 and 118: Higgins discloses an image processing system (figure 2 of Higgins). Figures 3-10 of Higgins show further details of the image processing system (column 3, lines 14-29 of Higgins).

Said system comprises an image analysis module (figure 7(82) of Higgins) for automatically analyzing each of the input images (column 16, lines 52-57 of Higgins). Said image analysis module analyzes the color space (column 16, lines 54-57 of Higgins), the discrete spectrum of the color space via a discrete cosine transform (column 16, lines 57-63 of Higgins), and the base level noise (column 17, lines 15-20 of Higgins).

Said system further comprises an image classification module (figure 7(83) of Higgins) for automatically classifying the analyzed image (column 16, lines 40-46 of Higgins). The classification is a hierarchy in the form of a pyramid (column 16, lines 47-51 of Higgins).

Said system further comprises an image compression module (figure 5(35) of Higgins) for automatically compressing the classified image data based on classification (column 19, lines 37-43 of Higgins).

Said system further comprises an output module (figure 2(12) of Higgins) for outputting at least one enhanced image (column 8, lines 48-56 of Higgins).

Further regarding claim 117, the overall image processing system uses a computing system with computer programs stored on a physical, computer-readable medium (column 7, lines 38-43 of Higgins).

Further regarding claim 118, in order for the image processing system to calculate using the programs stored on said physical, computer-readable medium, it is inherent that the binary data comprising said programs must be transmitted to the CPU. Therefore, said encoded programs of instructions are sent on a computer data signal embodied in a carrier wave readable by the computing system.

Regarding claims 26 and 85: Higgins discloses that the image analysis module, the image classification module, the image compression module, and the output module process the input image in real time on-the-fly (column 7, lines 14-20 of Higgins). The observer selects the specific processing chain for operation (column 7, lines 14-20 of Higgins), so the system processes the input image in real time on-the-fly.

Regarding claims 27 and 86: Higgins discloses that the image analysis module, the image classification module, the image compression module, and the output module process the input image as a group of images that differ from one another by measurable image attributes for the purpose of psychovisual testing (column

5, lines 9-13 of Higgins). The combination of attribute changes are tested simultaneously (column 5, lines 19-23 of Higgins), which inherently implies some form of batch mode processing.

Regarding claims 28 and 87: Higgins discloses that the image analysis module, the image classification module, the image compression module, and the output module process the input image in an embedded software (column 8, lines 16-21 of Higgins). Special-purpose hardware and program components (column 8, lines 18-19 of Higgins) is, by definition, embedded software.

Regarding claims 29 and 88: Higgins discloses that the image analysis module, the image classification module, the image compression module, and the output module process the input image in an embedded hardware (column 8, lines 16-21 of Higgins). The system can be implemented with special-purpose hardware (column 8, lines 17-19 of Higgins), of which embedded hardware is a type.

Regarding claims 30 and 89: Higgins discloses that the image analysis module, the image classification module, the image compression module, and the output module process the input image in an embedded firmware (column 8, lines 16-21 of Higgins). The combination of computer with special purpose hardware and program components (column 8, lines 19-21 of Higgins) comprises embedded firmware.

Regarding claims 31 and 90: Higgins discloses that the input images are processed by different modules in a series or chain arrangement (column 13, lines 45-51 of Higgins) of which the image enhancement module (figure 5(34) of Higgins) is a part (figure 5 and column 13, lines 45-48 of Higgins). Since operations applied to the

input images are applied in a series or chain arrangement (figure 5 of Higgins), then the image analysis module (figure 7(82) of Higgins), image classification module (figure 7(83) of Higgins), image enhancement module (figure 5(34) of Higgins), and output module (figure 2(12) of Higgins) apply an individual image enhancement independently to each of the input images (column 13, lines 22-27 of Higgins).

Regarding claims 32 and 91: Higgins discloses a pre-processor (figure 5(32) of Higgins) for pre-processing the image (column 13, lines 51-61 of Higgins). Since the pre-processor executes before the image analysis module (figure 7(82) of Higgins) and the image classification module (figure 7(82) of Higgins), both of which form the image integrity molecule class (figure 5(33) and column 16, lines 25-27 and lines 34-36 of Higgins), as clearly shown in figure 5 of Higgins, then the input image is pre-processed before analyzing and classifying the input image.

Regarding claims 33 and 92: Higgins discloses an image resizer (figure 5(34(l)) of Higgins) for resizing the enhanced image (column 14, lines 8-10 of Higgins) before outputting the compressed image (figure 5(35) and column 19, lines 39-43 of Higgins). The special effects module includes a plurality of modules, each performing different effects upon the image (column 14, lines 5-9 of Higgins). One such module performs stretching and skewing (column 14, lines 8-10 of Higgins), which therefore resizes the image.

Regarding claims 14, 34, 55 and 93: Higgins discloses a pre-compression post-resizing image enhancement module (figure 5(34(...)) of Higgins) for automatically applying at least one filter (column 14, lines 5-11 of Higgins) before compressing the

enhanced image (column 14, lines 14-18 of Higgins). The special effects module class (figure 5(34) of Higgins) includes a plurality of modules (column 14, lines 5-8 of Higgins), one of which performs kernel sharpening and/or color reassignment (column 14, lines 10-11 of Higgins), which is a form of filtering. A special effects unit that performs kernel sharpening and/or color reassignment that is placed after a special effects unit that performs stretching and skewing (column 14, lines 9-11 of Higgins) is therefore a pre-compression post-resizing image enhancement module.

Regarding claims 15, 35, 56 and 94: Higgins discloses a post-processor (figure 5(37) of Higgins) for post-processing the enhanced image before compressing the enhanced image (column 14, lines 33-40 of Higgins). The color map (figure 5(37) of Higgins) operates before the compression molecule class (figure 5(35) of Higgins) as can clearly be seen in figure 5 of Higgins.

Regarding claims 57 and 95: Higgins discloses an input module (figure 2(4,13,14) of Higgins) for inputting the input image (column 8, lines 27-33 of Higgins) and a set of parameters (column 8, line 63 to column 9, line 2 of Higgins). The input image data can be acquired from a plurality of different systems (column 8, lines 23-25 of Higgins), and is then processed and output as processed image data (column 8, lines 25-27 of Higgins). A digital file can be input from a specific device (column 7, lines 7-10 of Higgins) and different image data formats can be used (column 8, lines 35-39 and lines 45-47 of Higgins). As is well known in the art, different digital image data file formats have different naming conventions, including different file extensions. Therefore, the input module is capable of inputting multiple system, user defined

naming conventions for the output image as the set of parameters, said parameters being the parameters of the image input source (column 8, lines 63-67 of Higgins).

Regarding claims 17, 37, 59 and 97: Higgins discloses resizing, which is performed through stretching and skewing the image data (column 14, lines 8-10 of Higgins), which is controlled by image processing parameter data (column 14, lines 12-14 of Higgins). Therefore, the parameters define resizing parameters (column 14, lines 8-14 of Higgins).

Regarding claims 18, 19, 38, 60 and 98: Higgins discloses that the particular compression methodology used on the input data is specifically selected and controlled (column 19, lines 45-51 of Higgins). Therefore, the parameters define compression parameters (column 19, lines 45-51 of Higgins).

Regarding claims 71 and 104: Higgins discloses that the image compression module (figure 5(35) of Higgins) includes a JPEG compression (column 15, lines 25-27 of Higgins).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2-3, 16, 20-22, 24-25, 36, 39-41, 43-44, 58, 61-63, 83-84, 96 and 99-101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins (US Patent 5,835,627) in view of Guck (US Patent 5,911,776).

Regarding claims 2 and 43: Higgins discloses that said output module outputs a plurality of enhanced images with different file types (column 8, lines 35-37 and lines 45-47 of Higgins).

Higgins does not disclose expressly that said plurality of enhanced images with different file types are output without re-analyzing, re-classifying, and re-enhancing the input image.

Guck discloses outputting image data in a plurality of different file types (figure 2A and column 7, lines 2-13 of Guck). The original document data is converted directly into the different file types (column 6, line 65 to column 7, line 5 of Guck), therefore the plurality of different file types are output without re-processing the data.

Higgins and Guck are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the enhanced image data taught by Higgins in a plurality of different file types without reprocessing, as taught by Guck. The motivation for doing so would have been to be able to send the image data to a plurality of different types of destinations (column 7, lines 2-11 of Guck). Therefore, it would have been obvious to combine Guck with Higgins to obtain the invention as specified in claims 2 and 43.

Regarding claims 24 and 83: The arguments regarding claims 2 and 43 are incorporated herein. If a plurality of enhanced images with different file types can be output from said output module without re-analyzing, re-classifying, and re-enhancing the input image, then it is clear that said output module outputs a plurality of enhanced images with different file sizes without re-analyzing and re-classifying the input image.

Regarding claims 3 and 44: The arguments regarding claims 2 and 43 are incorporated herein. It is well known in the art that different file types for document and image data, such as RTF (column 6, lines 65-67 of Guck), TIFF (column 7, lines 4-5 of Guck) and GIF (column 7, lines 9-11 of Guck), have different file sizes for the same image since each file type stores the document and image data differently. Therefore, if said output module outputs a plurality of enhanced images with different file types, then said output module inherently outputs a plurality of enhanced images with different file sizes.

Regarding claims 25 and 84: The arguments regarding claims 3 and 44 are incorporated herein. If a plurality of enhanced images with different file sizes can be output from said output module without re-analyzing, re-classifying, and re-enhancing the input image, then it is clear that said output module outputs a plurality of enhanced images with different file sizes without re-analyzing and re-classifying the input image.

Regarding claims 16, 36, 58 and 96: Higgins discloses inputting a set of parameters (column 8, line 63 to column 9, line 2 of Higgins).

Higgins does not disclose expressly that the parameters define the number of the output images.

Guck discloses that a particular number of converted file formats can be output as shadow files based on a single document or image data file (column 7, lines 46-53 of Guck).

Higgins and Guck are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the number of desired file formats that the data is to be converted into, as taught by Guck, as one of the input parameters. The motivation for doing so would have been to specify all of the file types that the original image data is to be converted into (column 7, lines 50-53 of Guck). Therefore, it would have been obvious to combine Guck with Higgins to obtain the invention as specified in claims 16, 36, 58 and 96.

Regarding claims 20, 39, 61 and 99: Higgins does not disclose expressly a viewer for viewing the enhanced image before outputting.

Guck discloses that the operator view the virtual files before the virtual files are released (column 13, line 64 to column 14, line 1 of Guck). A virtual file (figure 8 of Guck) is an editable object (column 13, lines 37-38 of Guck) which is based on the associated file type (column 13, lines 45-48 of Guck). Since the operator can verify and test the virtual files before the virtual files are released (column 13, lines 64-65 of Guck), then there must inherently be some form of viewer with which to view the files.

Higgins and Guck are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the viewer taught by Guck to

view the enhanced images before they are output. The motivation for doing so would have been to be able to independently verify the image files (column 13, lines 64-65 of Guck). Therefore, it would have been obvious to combine Guck with Higgins to obtain the invention as specified in claims 20, 39, 61 and 99.

Regarding claims 21, 40, 62 and 100: Higgins does not disclose expressly that the input images are processed in a server computer of a network system, an output destination for the output image is coupled to the network system.

Guck discloses that the input images are processed (column 6, lines 10-15 of Guck) in a server computer (figure 1(50) and column 13, lines 64-65 of Guck) of a network system (column 5, line 66 to column 6, line 3 of Guck), an output destination for the output image is coupled to the network system (column 6, lines 4-9 of Guck).

Higgins and Guck are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a server connected to a network to process the input image. The motivation for doing so would have been to be able to connect to different clients using different protocols (column 5, line 67 to column 6, line 3 of Guck). Therefore, it would have been obvious to combine Guck with Higgins to obtain the invention as specified in claims 21, 40, 62 and 100.

Regarding claims 22, 41, 63 and 101: Higgins does not disclose expressly that the network system is the Internet, whereby the system is capable of being applied in an automated on-the-fly environment where images are sent to the server computer via the Internet whereupon the images are processed and transmitted to the output destination.

Guck discloses that the network system is the Internet (column 6, lines 49-51 of Guck). When a "Get Content" function is called, the source file is transformed by the converter without the server process knowing that this is taking place (column 10, lines 59-67 of Guck). Therefore, the system is capable of being applied in an automated on-the-fly environment (column 10, lines 59-67 of Guck). The images are sent to the server computer via the Internet (using HTTP or FTP) (column 10, lines 41-46 of Guck) whereupon the images are processed and transmitted to the output destination (column 16, lines 61-65 of Guck).

Higgins and Guck are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to applying the system in an automated fashion over the Internet. The motivation for doing so would have been to allow clients to easily access requested data over an Internet connection (column 13, lines 38-42 of Guck). Therefore, it would have been obvious to combine Guck with Higgins to obtain the invention as specified in claims 22, 41, 63 and 101.

8. Claims 64, 72, 102 and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins (US Patent 5,835,627) in view of Ratakonda (US Patent 5,956,026).

Regarding claims 64 and 102: Higgins does not disclose expressly that the image analysis module (figure 7(82) of Higgins) analyzes the image based on an image histogram.

Ratakonda discloses analyzing an image based on an image histogram (column 4, lines 48-51 of Ratakonda).

Higgins and Ratakonda are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply histogram processing in the image analysis module. The motivation for doing so would have been to classify different image frames from one another by being able to quantify their differences (column 4, lines 51-54 of Ratakonda). Therefore, it would have been obvious to combine Ratakonda with Higgins to obtain the invention as specified in claims 64 and 102.

Regarding claims 72 and 105: Higgins does not disclose expressly that the image resizer (figure 5(34(I)) of Higgins) resizes the image to a thumbnail size.

Ratakonda discloses resizing an image to a thumbnail size (column 5, lines 59-61 of Ratakonda).

Higgins and Ratakonda are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the image resizer taught by Higgins to resize the image to a thumbnail size, as taught by Ratakonda. The motivation for doing so would have been for fast retrieval and display of a summary of the image (column 5, lines 60-61 of Ratakonda). Therefore, it would have been obvious to combine Ratakonda with Higgins to obtain the invention as specified in claims 72 and 105.

9. Claims 66-69, 73-75, 77-79, 106-108 and 110-112 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins (US Patent 5,835,627) in view of Enomoto (US Patent 6,323,934 B1).

Regarding claim 66: Higgins does not disclose expressly that the image enhancement module (figure 5(34) of Higgins) includes a brightness filter.

Enomoto discloses using a brightness filter to enhance image data (column 12, lines 58-61 and lines 63-66 of Enomoto). Brightness correction (column 12, line 61 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a brightness filter, as taught by Enomoto, in the image enhancement module taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claim 66.

Regarding claim 67: Higgins does not disclose expressly that the image enhancement module (figure 5(34) of Higgins) includes a contrast filter.

Enomoto discloses using a contrast filter to enhance image data (column 12, lines 58-60 and lines 63-66 of Enomoto). Contrast correction (column 12, line 60 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have

been obvious to a person of ordinary skill in the art to include a contrast filter, as taught by Enomoto, in the image enhancement module taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claim 67.

Regarding claim 68: Higgins does not disclose expressly that the image enhancement module (figure 5(34) of Higgins) includes a saturation filter.

Enomoto discloses using a saturation filter to enhance image data (column 12, lines 58-62 and lines 63-66 of Enomoto). Saturation correction (column 12, line 62 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a saturation filter, as taught by Enomoto, in the image enhancement module taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claim 68.

Regarding claim 69: Higgins does not disclose expressly that the image enhancement module (figure 5(34) of Higgins) includes a curve filter.

Enomoto discloses using a curve filter (compression/expansion of density's dynamic range) to enhance image data (column 12, lines 58-61 and lines 63-66 of

Enomoto). Curve correction (column 12, line 61 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a curve filter, as taught by Enomoto, in the image enhancement module taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claim 69.

Regarding claims 73 and 106: Higgins does not disclose expressly that the image pre-processor (figure 5(32) of Higgins) includes a brightness filter.

Enomoto discloses using a brightness filter to process image data (column 12, lines 58-61 and lines 63-66 of Enomoto). Brightness correction (column 12, line 61 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a brightness filter, as taught by Enomoto, in the image pre-processor taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claims 73 and 106.

Regarding claims 74 and 107: Higgins does not disclose expressly that the image pre-processor (figure 5(32) of Higgins) includes a brightness filter.

Enomoto discloses using a contrast filter to process image data (column 12, lines 58-60 and lines 63-66 of Enomoto). Contrast correction (column 12, line 60 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a contrast filter, as taught by Enomoto, in the image pre-processor taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claims 74 and 107.

Regarding claims 75 and 108: Higgins does not disclose expressly that the image pre-processor (figure 5(32) of Higgins) includes a saturation filter.

Enomoto discloses using a saturation filter to process image data (column 12, lines 58-62 and lines 63-66 of Enomoto). Saturation correction (column 12, line 62 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a saturation filter, as taught by Enomoto, in the image pre-processor taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of

Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claims 75 and 108.

Regarding claims 77 and 110: Higgins does not disclose expressly that the image post-processor (figure 5(37) of Higgins) includes a brightness filter.

Enomoto discloses using a brightness filter to process image data (column 12, lines 58-61 and lines 63-66 of Enomoto). Brightness correction (column 12, line 61 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a brightness filter, as taught by Enomoto, in the image post-processor taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claims 77 and 110.

Regarding claims 78 and 111: Higgins does not disclose expressly that the image post-processor (figure 5(37) of Higgins) includes a brightness filter.

Enomoto discloses using a contrast filter to process image data (column 12, lines 58-60 and lines 63-66 of Enomoto). Contrast correction (column 12, line 60 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a contrast filter, as taught

by Enomoto, in the image post-processor taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claims 78 and 111.

Regarding claims 79 and 112: Higgins does not disclose expressly that the image post-processor (figure 5(37) of Higgins) includes a saturation filter.

Enomoto discloses using a saturation filter to process image data (column 12, lines 58-62 and lines 63-66 of Enomoto). Saturation correction (column 12, line 62 of Enomoto) can be performed by filtering (column 12, line 66 of Enomoto).

Higgins and Enomoto are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a saturation filter, as taught by Enomoto, in the image post-processor taught by Higgins. The motivation for doing so would have been to improve the image data quality (column 4, lines 1-4 of Enomoto). Therefore, it would have been obvious to combine Enomoto with Higgins to obtain the invention as specified in claims 79 and 112.

10. Claims 70, 76, 80-81, 109 and 113-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins (US Patent 5,835,627) in view of Tretter (US Patent 5,867,606).

Regarding claim 70: Higgins does not disclose expressly that the image enhancement module (figure 5(34) of Higgins) includes an unsharp mask filter.

Tretter discloses using an unsharp mark filter to enhance image data (figure 2 and column 4, lines 13-16 of Tretter).

Higgins and Tretter are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an unsharp mask filter, as taught by Tretter, in the image enhancement module taught by Higgins. The motivation for doing so would have been to improve the appearance of the digital image (column 1, lines 12-14 of Tretter). Therefore, it would have been obvious to combine Tretter with Higgins to obtain the invention as specified in claim 70.

Regarding claims 76 and 109: Higgins does not disclose expressly that the image pre-processor (figure 5(32) of Higgins) includes an unsharp mask filter.

Tretter discloses using an unsharp mark filter to process image data (figure 2 and column 4, lines 13-16 of Tretter).

Higgins and Tretter are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an unsharp mask filter, as taught by Tretter, in the image pre-processor taught by Higgins. The motivation for doing so would have been to improve the appearance of the digital image (column 1, lines 12-14 of Tretter). Therefore, it would have been obvious to combine Tretter with Higgins to obtain the invention as specified in claims 76 and 109.

Regarding claims 80 and 113: Higgins does not disclose expressly that the image post-processor (figure 5(37) of Higgins) includes an unsharp mask filter.

Tretter discloses using an unsharp mark filter to process image data (figure 2 and column 4, lines 13-16 of Tretter).

Higgins and Tretter are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an unsharp mask filter, as taught by Tretter, in the image post-processor taught by Higgins. The motivation for doing so would have been to improve the appearance of the digital image (column 1, lines 12-14 of Tretter). Therefore, it would have been obvious to combine Tretter with Higgins to obtain the invention as specified in claims 80 and 113.

Regarding claims 81 and 114: Higgins does not disclose expressly that the pre-compression post-resizing image enhancement module (figure 5(34(...)) and column 14, lines 5-11 of Higgins) includes an unsharp mask filter.

Tretter discloses using an unsharp mark filter to enhance image data (figure 2 and column 4, lines 13-16 of Tretter).

Higgins and Tretter are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include an unsharp mask filter, as taught by Tretter, in the pre-compression post-resizing image enhancement module taught by Higgins. The motivation for doing so would have been to improve the appearance of the digital image (column 1, lines 12-14 of Tretter). Therefore, it would have been obvious to combine Tretter with Higgins to obtain the invention as specified in claims 81 and 114.

11. Claims 65 and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins (US Patent 5,835,627) in view of Mitsuyama (US Patent 5,768,412).

Regarding claims 65 and 103: Higgins does not disclose expressly that the image classification module (figure 7(83) of Higgins) classifies the image based on a weighted mean range, a weighted standard deviation range, and a half value position range of an image luminosity histogram.

Mitsuyama discloses that a weighted mean range (average density) (column 12, lines 33-35 of Mitsuyama), a weighted standard deviation range (column 20, equation 24 and lines 15-20 of Mitsuyama), and a half value position range (half-value width) (column 11, lines 26-31 of Mitsuyama) are used to classify image regions (column 12, line 33; column 11, lines 29-31; and column 20, lines 16-18 of Mitsuyama).

Higgins and Mitsuyama are combinable because they are from the same field of endeavor, namely image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image classification module taught by Higgins to use a weighted mean range, a weighted standard deviation range, and a half value position range to classify the image, as taught by Mitsuyama. The motivation for doing so would have been to determine key features of an image in order to better classify the image. Therefore, it would have been obvious to combine Mitsuyama with Higgins to obtain the invention as specified in claims 65 and 103.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moore et al., US Patent 5,294,989, 15 March 1994.

Cheng et al., US Patent 6,012,070, 4 January 2000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Thompson whose telephone number is 703-305-6329. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703-308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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James A. Thompson
Examiner
Art Unit 2624

JAT
June 23, 2004

THOMAS D
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PRIMARY EXAMINER